

MONITORING LOW TEMPERATURE RAPID THERMAL ANNEAL PROCESS USING IMPLANTED WAFERS

ABSTRACT OF THE DISCLOSURE

A method for processing integrated circuit devices. The method includes providing a monitor wafer, which comprising a silicon material. The method introduces a plurality of particles within a depth of the silicon material. The plurality of particles have a reduced activation energy within the silicon material. The method subjects the monitor wafer including the plurality of particles into a rapid thermal anneal process. The method includes applying the rapid thermal anneal process at a first state including a first temperature. The first temperature is within a range defined as a low temperature range, which is less than 650 Degrees Celsius. The method includes removing the monitor wafer and measuring a sheet resistivity of the monitor wafer. The method also determines the first temperature within a tolerance of less than 2 percent across the monitor wafer. The method operates the rapid thermal process using a plurality of production wafers if the first temperature is within a tolerance of a specification temperature.

PA 3309008 v1